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(54) **RIGID POLYMERIC BLADE FOR A WIND TURBINE AND METHOD AND APPARATUS TO MANUFACTURE SAME**

(71) Applicant: **10x Technology LLC**, Libertyville, IL (US)

(72) Inventors: **Robert M. Pricone**, Libertyville, IL (US); **John C. Nelson**, The Sea Ranch, CA (US)

(73) Assignee: **10X TECHNOLOGY LLC**, Libertyville, IL (US)

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CPC ***F03D 1/0641*** (2013.01); ***F03D 1/0675*** (2013.01); *B29C 33/42* (2013.01); *B29L 2031/085* (2013.01); *F05B 2240/2212* (2013.01); *F05B 2250/11* (2013.01)

(58) **Field of Classification Search**

CPC . F03D 1/0641; B29C 33/42; B29L 2031/085; F05B 2250/11; F05B 2240/2212

See application file for complete search history.

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Primary Examiner — Richard A Edgar
(74) *Attorney, Agent, or Firm* — Medley, Behrens & Lewis, LLC; Nathan T. Lewis

(57) **ABSTRACT**

In an embodiment, a molding apparatus for a turbine blade includes first and second mold compartments defining a mold cavity when in a closed position, at least one of the first and second mold compartments including a micro-structured surface facing an interior of the mold cavity. The micro-structured surface includes an array of V-shaped channels, and the V-shaped channels have a maximum height of 200 micrometers. A turbine blade including integral micro-structured riblets and method for making the turbine blade is also provided.

4 Claims, 3 Drawing Sheets